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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,269	08/22/2006	Tadao Kyomoto	1152-0328PUS1	6070
2292 7590 06/25/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER BOWMAN, MARY ELLEN				
ART UNIT		PAPER NUMBER		
2879				
NOTIFICATION DATE		DELIVERY MODE		
06/25/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

### Office Action Summary

**Application No.**

10/590,269

**Applicant(s)**

KYOMOTO ET AL.

**Examiner**

MARY ELLEN BOWMAN

**Art Unit**

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-893)  
Paper No(s)/Mail Date 4/17/09, 6/12/09
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 12, 2009 has been entered.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 2 and 5-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, 8-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buelow, II et al., USPN 6,554,456 B1, published April 29, 2003 (hereinafter referred to as "Buelow") in view of Tsuchida, JP11-327047, published November 26, 1999 (hereinafter referred to as "Tsuchida") and further in view of Kojima, JP 2001-249405 A, published September 14, 2001 (hereinafter referred to as "Kojima").

Note: The attached English translation of Tsuchida is cited in this Action.

**Regarding claim 1**, Buelow teaches **an enclosed light source device** (e.g., col 1, lines 12-14; “optical light system for efficiently collecting and directing light”) **comprising: an arc tube having a pair of main electrodes arranged on one electrode axis with leads of the main electrodes sealed with sealed portions** (e.g., Figure 1 below; col 2, lines 56-57; “lamp 11 (i.e., arc tube) has an enlarged, or bulbous, region 11a and upper and lower arms 11b and 11c (i.e., sealed portions containing electrodes as shown in figure)”) **; and a reflector for reflecting an outgoing light emitted from the arc tube and emitting the reflected light to the front** (e.g., col 2, lines 52-54; “a reflective member 15...directs light from the left-shown side of lamp 11 into coupling device 12”; see Figure 1 below), **the electrode axis of the main electrodes being arranged to cross an optical axis of the outgoing light** (e.g., col 3, line 12; “main axis 16 of light propagation”; see Figure 1 below, the electrode axis (i.e., the line between 11b and 11c) crosses the light axis 16), **the reflector being formed of a metal substrate** (e.g., col 1, line 48; “PAR30 lamps”; NOTE: PAR stands for parabolic aluminum reflector, meaning that the reflector of said lamp would be aluminum) **and being constructed so that a light source fitting space for holding the sealed portions of the arc tube** (e.g., portions 11b and 11c in Figure 1 below) **in a manner that allows heat from the arc tube to be conducted to the reflector is formed** (see Figure 1 below, bulbous portion 11a, where the light emission occurs, is surrounded by reflector 15, such that heat may be conducted to the reflector). Buelow fails to teach the shape of the reflectors or the position and composition of the condensing lens.

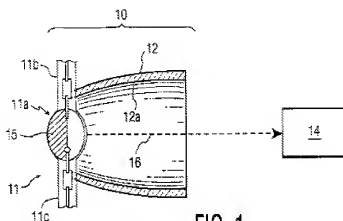
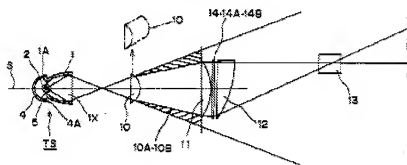


FIG. 1

Tsuchida, in the same field of endeavor of enclosed light sources, teaches a **first reflector portion being formed with a spherical surface centered at a light generation point of the arc tube is formed on a rear side from the arc tube as a boundary** (Figure 1 below, reflector 4), a **second reflector portion being formed with an ellipsoid formed in front of the boundary of the arc tube (reflector 1), and the outgoing light emitted from the arc tube being reflected by the first and second reflector portions so that the reflected light reaches a predetermined condensed spot outside the reflector** (Figure 1 below, condensed spot outside reflectors).

【図 1】

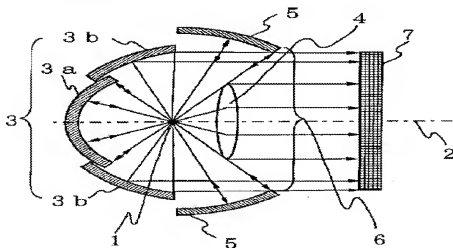


It would have been obvious to one of ordinary skill in the art at the time the invention was made to include two reflectors around a light source in order to ensure that all possible light is reflected from the light source to one condensed spot.

In the same field of endeavor of enclosed light sources, Kojima teaches **a lens, provided inside the reflector portion, that condenses all of the outgoing light not reflected by the second reflector portion** (see Figure 5 below, all outgoing light not reflected by 5 is condensed by condensing lens 4), **such that the condensed outgoing light is directed to the predetermined condensed spot** (Figure 5 below, predetermined condensed spot is irradiated object 7).

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JP, 2001-249405, A [FULL CONTENTS]



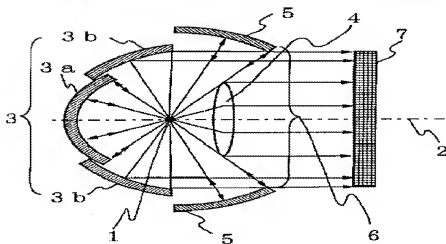
It would have been obvious to one of ordinary skill in the art at the time the application was made to utilize a condensing lens in order to fully realize the efficiency potential of the projector apparatus by condensing all possible light emitted from the arc tube such that the light can be emitted to one spot (Kojima; [0016]).

**Regarding claim 2,** Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Kojima further teaches **the lens is positioned so that a principal**

point thereof is located on the optical axis while a periphery of the lens is located at a position at which, of the outgoing light beams emitted forwards from the arc tube, the light beam illuminating a vicinity of an opening of the second reflector portion intersects the light beam that is reflected at an innermost position of the second reflector and brought to the condensed spot (see Figure 5 below, the lens 4 is situated on the optical axis and all light emitted from light source 1 reaches the condensed area 7 where the image forms). Kojima further teaches that the positioning of the lens increases light emission efficiency of the light source ([0016]).

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JP, 2001-249405, A [FULL CONTENTS]



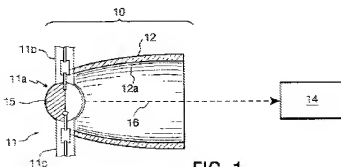
Regarding claim 5, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Kojima further teaches a **luminance equalization means** for equalizing a surface luminance of the light beams by shaping light that is emitted from the arc tube and reaches the condensed spot after reflection by the first reflector portion and the second reflector portion or after condensation by the lens into a designated pattern and by mixing by multiple reflection is integrally provided at a front end of the reflector, forming an enclosed structure of the reflector (e.g., [0021]; “auxiliary reflector 5...is arranged

so that a light source 1 may serve as a focus, and the same circular opening 6 as the form of the circular non-glaring body 7 is formed in the auxiliary reflector 5"; see Figure 5 above).

**Regarding claim 12**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Kojima further teaches **a video display apparatus** (e.g., [0001]; "light installation used for a projector") **comprising the enclosed light source device according to claim 1**.

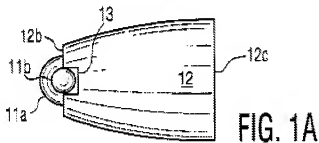
Regarding claims 2, 5, and 12, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the lens and reflectors in the configuration as taught by Kojima, because said configuration provides the benefit of increasing light emission efficiency of the light source (Kojima; [0016]).

**Regarding claim 8**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Buelow further teaches **sealed portions that seal the leads of the main electrodes** (e.g., portions 11b and 11c) **are formed on both sides of the light generation point of the arc tube** (e.g., portion 11a), **and the heat radiation members are arranged between the sealed portions and the reflector** (see Figure 1 below, heat radiation portion 11a, i.e., the part of the lamp that emits the light, and therefore the heat, is located between the sealed portions 11b and 11c and the reflector 15).





**Regarding claim 9**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Buelow further teaches **the reflector has a separable structure such that it can be separated at a boundary containing the electrode axis of the arc tube into a first reflector part that forms the first reflector portion and a second reflector part that forms the second reflector portion** (e.g., see Figure 1 above, first reflector portion 15 is separable from second reflector portion 12 at the electrode axis), **and a light source fitting groove in which the sealed portions of the arc tube are arranged is formed in a separated face of the separable structure** (e.g., col 2, lines 64-65; “recess 13 receiving top arm 11b of the lamp and another recess (not shown in Fig. 1A) receiving lower arm 11c”; see Figure 1A below; light source fitting groove 13 is located at the separated face of reflector 12).



**Regarding claim 10**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, and Buelow further teaches **the reflector has a separable structure such that it can be separated along a plane parallel to the optical axis** (e.g., Figure 1 below, reflector 15 can be separated from reflector 12 along a plane parallel to optical axis 16 because the top and bottom of reflector 15 does not touch reflector 12).

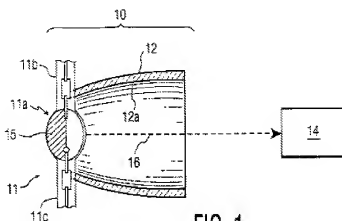


FIG. 1

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buelow in view of Tsuchida and further in view of Kojima as applied to claims 1 and 5 respectively above, and further in view of Roberts et al., USPN 6,200,005 B1, published March 13, 2001 (hereinafter referred to as "Roberts").

**Regarding claims 6 and 7,** Buelow, Tsuchida and Kojima teach the inventions as explained above regarding claims 1 and 5 respectively, and Buelow further teaches **the reflector is formed of an aluminum substrate** (e.g., col 1, line 48; "PAR30 lamps"; NOTE: PAR stands for parabolic aluminum reflector, meaning that the reflector of said lamp would be aluminum), **and the luminance equalization means has a cylindrical configuration** (e.g., col 4, lines 17-20; "member 52 can be a tubular (i.e., cylindrical)...rod...that can have one or more of IR, UV or AR coatings on either or both of its inlet (left-shown) surface and its outlet surface 52a"; see Figure 7 below). Buelow, Kojima, and Wedell fail to teach the specific order of coatings on the reflector or the equalization means.

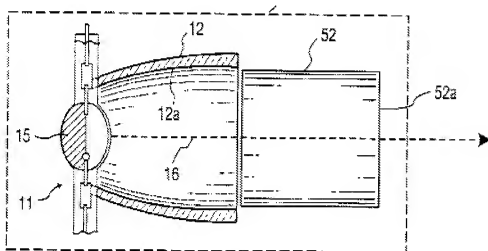


FIG. 7

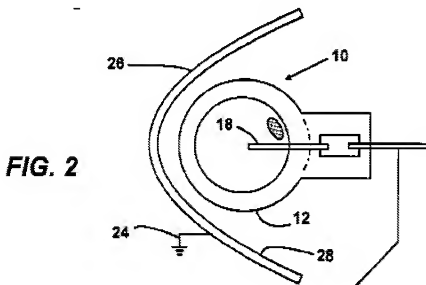
Roberts, in the same field of endeavor of enclosed light sources, teaches **the reflector (or luminance equalization means) is formed of a layer for converting an infrared component into heat is formed on a reflecting surfaces of the first reflector portion and the second reflector portion, a dielectric reflection multi-coating is formed over the layer for heat conversion with a flattening layer provided in-between, so that visible light rays reach the predetermined condensed spot** (e.g., col 2, lines 56-59; "a multilayer dichroic cold mirror coating (i.e., dielectric reflection multi-coating) over an absorbing layer (i.e., flattening layer) for spherical back reflector 20 (i.e., layer for heat conversion) may be preferable"). Roberts further teaches that the use of coatings on the reflector reduces the infrared and heat output of the lamp (col 2, lines 58-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the coatings as taught by Roberts on a reflector or on a luminance equalization means in order to produce the well known benefit of reducing the infrared and heat output of the lamp.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buelow in view of Tsuchida and further in view of Kojima as applied to claim 8 above, and further in view of Lapatovich, USPN 6,566,817 B2, published May 20, 2003 (hereinafter referred to as "Lapatovich") and Ishino et al., USPN 7,234,845 B2, filed November 12, 2003 (hereinafter referred to as "Ishino").

**Regarding claim 11**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 8, but fail to teach the reflector is grounded and electrically connected to an electrode.

Lapatovich, in the same field of endeavor of enclosed light sources, teaches **the reflector is grounded** (e.g., Figure 2 below; col 2, line 32; "a ground 24 may be provided adjacent to envelope 12. Ground 24 may be part of a surface 26 of a reflector").



It would have been obvious to one of ordinary skill in the art at the time the invention was made to ground the reflector in order to create the well known benefit of providing a means of dispersing the current that would be applied to reflector from the lamp.

Buelow, Tsuchida, Kojima and Lapatovich fail to teach the electrode is electrically connected to the reflector.

Ishino, in the same field of endeavor of enclosed light sources, teaches **an annular auxiliary electrode that encloses a proximal end side of the sealed portion of the arc tube is provided and the auxiliary electrode is electrically connected to the reflector** (e.g., col 7, lines 22-24; "the terminal portions 16a, 16a and 16b are connected to the electrode terminals 12b, 12b and the reflector 13 to electrically connect such portions").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to electrically connect the electrode to the reflector in order to obtain the well known benefit of heat dissipation from the lamp to the reflector in order to increase the life of the lamp.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buelow in view of Tsuchida and further in view of Kojima, as applied to claim 1 above, and further in view of Wedell, USPN 5,535,111, published July 9, 1996 (hereinafter referred to as "Wedell").

**Regarding claim 13**, Buelow, Tsuchida and Kojima teach the invention as explained above regarding claim 1, but fail to teach a high temperature lens.

Wedell, in the same field of endeavor of enclosed light sources, teaches **a lens consists of a glass material that will not deteriorate under a high-temperature atmosphere in a vicinity of the arc tube** (col 3, lines 22-23; "lens 28 is preferably formed of tempered glass").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a tempered glass material to make the condensing lens in order to obtain the well known benefit of longer useful life of the lens, and therefore, a lower cost of maintaining the projection device.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY ELLEN BOWMAN whose telephone number is (571) 270-5383. The examiner can normally be reached on Monday-Thursday, 7:30 a.m.-6:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B./  
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Supervisory Patent Examiner, Art Unit 2879